

**APPENDIX B**

**SPECIES OF SPECIAL CONCERN  
(FEDERAL, GLOBAL AND STATE)**

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Table of federally and state-listed endangered and threatened species and species of special concern (with their state Heritage Program and global rankings) occurring at each of the nine parks in the Eastern Rivers and Mountains Network. For state Natural Heritage Program listings, included species have a state ranking of S3 or lower, with the exception of species of special concern in New Jersey that may have rankings higher than S3. Please see appended documents for a complete list of the definitions used for global, federal and state rankings. For parks that span multiple states exact species locations (state) were not always given. Therefore, species found in those parks are given both states' rankings where applicable. In some cases, a species without an exact location may be listed in one state and not the other; however, if it was listed in either state, it has been included. In addition, common names may differ between states; however, only one common name is given. Scientific name synonyms are listed in parenthesis. An asterisk next to the Pennsylvania state plant status indicates that the status is proposed.

COMMON NAME	Scientific Name	Fed. Stat.	State status				NHP Rankings				Global Rank	ALPO	JOFL	FRHI	FONE	NERI	GARI	BLUE	DEWA	UPDE
			PA	NY	NJ	WV	PA	NY	NJ	WV										
PLANTS																				
red baneberry	Actaea rubra var. rubra								S3		G5T5								X	
climbing fumitory	Adlumia fungosa								S2	S2?	G4					X	X	X	X	
small-flower false foxglove	Agalinus paupercula var paupercula		PE				S1		S3		G5T?								X	
yellow giant-hyssop	Agastache nepetoides			T				S2S3	S2		G5					X			X	
purple giant-hyssop	Agastache scrophulariifolia								S2		G4								X	
small-fruited agrimony	Agrimonia microcarpa									S1	G5							X		
Britton's grooveburr	Agrimonia striata								S3S4		G5								X	
large water-plantain	Alisma triviale		PE		E		S1		S1		G5								X	
nodding onion	Allium oxyphilum									S2	G2Q							X		
speckled alder	Alnus incana ssp incana								S3S4		G5T5		X						X	
mountain alder	Alnus viridis		PE				S1				G5								X	
short-awn meadow-foxtail	Alopecurus aequalis var aequalis		*TU				S3		S2		G5T5?								X	
broomsedge	Andropogon glomeratus var glomeratus		*PR				S3			S2	G5T5						X	X		
Canada anemone	Anenome canadensis								SX	S1	G5							X		
riverbank anemone	Anemone virginiana var alba (var riparia)								S2		G5T4T5								X	
hairy angelica	Angelica venenosa								S2		G5						X		X	
spreading rockcress	Arabis patens		*PT				S2			S2	G3					X				

bristly sarsaparilla	<i>Aralia hispida</i>							S3S4		G5								X
American spikenard	<i>Aralia racemosa ssp racemosa</i>							S3S4		G4G5T4T5	X	X			X	X	X	X
eastern dwarf-mistletoe	<i>Arceuthobium pusillum</i>		PT		E		S2		S1	G5								X
manzanita bearberry	<i>Arctostaphylos uva-ursi</i>		PX				SX			G5			X					X
greendragon	<i>Arisaema dracontium</i>							S3S4		G5					X			X
purple needlegrass	<i>Aristida purpurascens var purpurascens</i>		PT				S2		S1	G5T5					X	X	X	
Virginia-snakeroot	<i>Aristolochia serpentaria</i>			E			S2	S3		G4					X			X
tall milkweed	<i>Asclepias exaltata</i>							S3S4		G5					X			X
purple milkweed	<i>Asclepias purpurascens</i>			U			S2S3	S3S4		G5?					X			X
whorled milkweed	<i>Asclepias verticillata</i>							S2		G5								X
Bradley's spleenwort	<i>Asplenium bradleyi</i>		*PE	E	E		S1	SH	S1	G4								X
mountain spleenwort	<i>Asplenium montanum</i>			T			S2S3	S2		G5					X		X	X
lobed spleenwort	<i>Asplenium pinnatifidum</i>		N		E		S3		S1	G4							X	X
maidenhair spleenwort	<i>Asplenium trichomanes spp trichomanes</i>							S2S4		G5T5	X				X		X	X
wild false indigo	<i>Baptisia australis</i>		*TU				S3		S3	G5					X	X	X	
American barberry	<i>Berberis canadensis</i>		PX				SX		S1	G3			X		X			
paper birch	<i>Betula papyrifera var papyrifera</i>							S2	S2	G5T5	X							X
blunt-lobe grape fern	<i>Botrychium oneidense</i>			E			S2S3	S2	S1	G4Q								X
least moonwort	<i>Botrychium simplex var simplex</i>							S1.1		G5T5								X
Kalm's brome	<i>Bromus kalmii</i>		*TU				S3	S2		G5					X			X
early brome	<i>Bromus latiglumis</i>							S2S3		G5								X
wild calla	<i>Calla palustris</i>							S3		G5								X
grass pink	<i>Calopogon tuberosus var tuberosus</i>								S1	G5T5					X			
two-leaf toothwort	<i>Cardamine diphylla</i>							S3		G5	X				X			X
purple bittercress	<i>Cardamine douglassii</i>							S2		G5							X	X
bitter cress	<i>Cardamine flagellifera</i>								S1S2	G3					X		X	
round-leaf bittercress	<i>Cardamine rotundifolia</i>			E	E		S1	S1		G4	X		X		X		X	X

summer sedge	<i>Carex aestivalis</i>								S2	G4					X			X	
narrow-leaf sedge	<i>Carex amphibola</i> var <i>amphibola</i>			E	E			S1	S1		G5				X			X	X
Appalachian sedge	<i>Carex appalachica</i>								S3S4	S2	G4							X	
drooping wood sedge	<i>Carex arctata</i>				E				S1.1	S1	G5?							X	
bebb's sedge	<i>Carex bebbii</i>		PE				S1		S2		G5							X	
bicknell's sedge	<i>Carex bicknellii</i> var <i>bicknellii</i>		PE				S1		S2		G5T5							X	
brome-like sedge	<i>Carex bromoides</i> ssp <i>bromoides</i>									S3	G5T5				X				
Bush's sedge	<i>Carex bushii</i>				E				S1	S2S3	G4				X			X	
silvery sedge	<i>Carex canescens</i> var <i>canescens</i>								SH	S3	G5T5							X	
Carey's sedge	<i>Carex careyana</i>		PE				S1			S1	G4G5				X				
Carolina sedge	<i>Carex caroliniana</i>			E				SH	S3		G5							X	
Collins' sedge	<i>Carex collinsii</i>		*PT	E			S2	S1S2			G4							X	
bearded sedge	<i>Carex comosa</i>									S2	G5				X				
soft fox sedge	<i>Carex conjuncta</i>			E				SH			G4G5				X		X		X
field sedge	<i>Carex conoidea</i>								S2	S1	G5							X	
crawe's sedge	<i>Carex crawei</i>			T	E			S1S2	S1		G5							X	
crawford's sedge	<i>Carex crawfordii</i>		*PE				S1		S2		G5							X	
northeastern sedge	<i>Carex cryptolepis</i>		*PE				S1		S2		G4							X	
clustered sedge	<i>Carex cumulata</i>			T	E			S2S3	SH		G4?							X	
Davis' sedge	<i>Carex davisii</i>			T				S2		S1	G4				X				X
Dewey's sedge	<i>Carex deweyana</i>				E				S1		G5							X	
soft-leaf sedge	<i>Carex disperma</i>		PR				S3		S1		G5							X	
Emory's sedge	<i>Carex emoryi</i>			E				S1	S3S4	S2	G5				X		X		X
yellow sedge	<i>Carex flava</i>		PT				S2				G5							X	
cloud sedge	<i>Carex haydenii</i>		*PT	E	E		S1S2	S1	S1	S1	G5							X	
pubescent sedge	<i>Carex hirtifolia</i>									S2	G5				X				
Hitchcock's sedge	<i>Carex hitchcockiana</i>								S2		G5				X			X	
inland sedge	<i>Carex interior</i>									S1	G5				X				
slender sedge	<i>Carex lasiocarpa</i>		PR				S3		S2		G5							X	

fine nerve sedge	<i>Carex leptoneuria</i>				E			S1	S2	G4								X
midland sedge	<i>Carex mesochorea</i>			E			S2	S1	S2	G4G5				X				
troublesome sedge	<i>Carex molesta</i>			T			S2	S2S3	S1	G4				X		X		
larger straw sedge	<i>Carex normalis</i>								S2	G5						X		
variable sedge	<i>Carex polymorpha</i>		*PT	U	E	S2	SX	S1	S1	G3							X	
reflexed sedge	<i>Carex retroflexa</i>			E			S2S3	S3S4		G5				X		X	X	
weak stellate sedge	<i>Carex seorsa</i>								S1	G4				X				
long-beak sedge	<i>Carex sprengelii</i>		*PR			S3				G5?							X	
dioecious sedge	<i>Carex sterilis</i>		*PE			S1		S2		G4							X	
bent sedge	<i>Carex styloflexa</i>			E			S1	S3S4	S1	G4G5				X				
prairie straw sedge	<i>Carex suberecta</i>								S1	G4				X				
quill sedge	<i>Carex tenera</i>							S1		G5							X	
rigid sedge	<i>Carex tetanica</i>		PT			S2			S1	G4G5							X	
cattail sedge	<i>Carex typhina</i>		*PT	T		S2	S2	S3	S2	G5				X			X	
green sedge	<i>Carex viridula</i>		PE			S1		S2		G5							X	
pretty sedge	<i>Carex woodii</i>								S1	G4				X		X		
scarlet indian-paintbrush	<i>Castilleja coccinea</i>		*PT	E		S2	S1	S2		G5							X	X
devil's bit	<i>Chamaelirium luteum</i>			T			S1S2	S3		G5							X	
hairy lip fern	<i>Cheilanthes lanosa</i>			E			SH	S2		G5				X			X	
fringetree	<i>Chionanthus virginicus</i>		*PT			S3		S3		G5				X			X	
American bugbane <sup>1</sup>	<i>Cimicifuga americana</i>		*PR			S3				G4	X			X	X			
tall thistle	<i>Cirsium altissimum</i>			U			SX	SH		G5							X	
Hammond's yellow spring beauty	<i>Claytonia virginica</i> var <i>hammondiae</i>				E			S1.1		G5T1							X	
purple clematis	<i>Clematis occidentalis</i> var <i>occidentalis</i>							S2	S2	G5T5							X	
wild basil	<i>Clinopodium vulgare</i> ( <i>Satureja vulgaris</i> )							S3S4		G5	X	X		X	X		X	
long-bract frog orchid	<i>Coeloglossum viride</i>		TU			SH				G5							X	
slender dayflower	<i>Commelina erecta</i>		PX		E	SX		SH.1	S2	G5				X				
early coralroot	<i>Corallorhiza trifida</i>							S2	S1	G5							X	
spring coralroot	<i>Corallorhiza wisteriana</i>		*PE			S1		SX	S1	G5				X				

star tickseed	<i>Coreopsis pubescens</i> var <i>robusta</i>								S2	G5?T3?					X				
Canadian bunchberry	<i>Cornus canadensis</i>							S2	S3	G5					X			X	
dotted hawthorn	<i>Crataegus punctata</i>							S2		G5					X			X	
littlehip hawthorn	<i>Crataegus spathulata</i>								S1	G5					X				
Northern croton	<i>Croton glandulosus</i>								SH	G5					X				
pretty dodder	<i>Cuscuta indecora</i>				E			S1.1	S1	G5					X				
Fraser's sedge	<i>Cymophyllus fraserianus</i>		PE				S1			S3	G4				X				
hop sedge	<i>Cyperus lupulinus</i> ssp <i>lupulinus</i>			T				S2			G5T5?				X				X
reflexed flatsedge	<i>Cyperus refractus</i>		PE		E		S1		SH	S2	G5				X				
awned cyperus	<i>Cyperus squarrosus</i>								S3S4	S2	G5				X				
bulblet fern	<i>Cystopteris bulbifera</i>								S3S4		G5	X			X			X	
lowland fragile fern	<i>Cystopteris protrusa</i>			E			S1	S2			G5				X			X	
tufted hair grass	<i>Deschampsia caespitosa</i>		*TU				S3		S3		G5							X	
tall tick-trefoil	<i>Desmodium glabellum</i>		TU				SU				G5				X			X	
sand tick-trefoil	<i>Desmodium lineatum</i>								S1		G5				X				
fewflower tick-trefoil	<i>Desmodium pauciflorum</i>			E	E			SH	S1	S1	G5				X	X			
velvety tick-trefoil	<i>Desmodium viridiflorum</i>		*TU				SU		S2		G5?							X	
squirrel-corn	<i>Dicentra canadensis</i>				E				S1		G5	X		X	X			X	
wild bleeding-heart	<i>Dicentra eximia</i>		PE		E		S1		SH.1		G4							X	
a panic grass	<i>Dichanthelium acuminatum</i> var <i>acuminatum</i>								S1		G5T5					X			
slender crabgrass	<i>Digitaria filiformis</i>			T				S2		S1	G5					X	X		
leatherwood	<i>Dirca palustris</i>								S2		G4				X	X	X	X	
cornel-leaf aster	<i>Doellingeria infirma</i>								S2		G5							X	
clinton's wood fern	<i>Dryopteris clintoniana</i>		*PT				S2		S3		G5							X	
flat-stem spike-rush	<i>Eleocharis compressa</i>		PE		E		S1		S1	S2	G4				X			X	
elliptic spike-rush	<i>Eleocharis elliptica</i>		PE				S2		S2	S1	G5							X	
matted spikerush	<i>Eleocharis intermedia</i>		PT				S2		S2	S1	G5				X				
creeping spikerush	<i>Eleocharis palustris</i>								S1		G5						X		
bog willowherb	<i>Epilobium leptophyllum</i>								S2		G5							X	

downy willowherb	<i>Epilobium strictum</i>		*PR				S3		S2		G5?							X
variegated scouring-rush	<i>Equisetum variegatum</i>		PE		E		S1		S1		G5							X
thin-leaved cotton-grass	<i>Eriophorum viridicarinatum</i>		PT				S2		S3		G5							X
wahoo	<i>Euonymus atropurpurea</i> var <i>atropurpurea</i>								S1		G5T5					X		X
Godfrey's boneset	<i>Eupatorium godfreyanum</i>		*TU				S2		SH.1	S2S3	G4					X		
mottled Joe-pye weed	<i>Eupatorium maculatum</i> var <i>maculatum</i>								S3S4	S1	G5T5		X		X	X		
vervain thoroughwort	<i>Eupatorium pilosum</i>									S2	G5					X		
queen-of-the-prairie	<i>Filipendula rubra</i>		TU		E		S1S2		SH		G4G5							X
annual fimbry	<i>Fimbristylis annua</i>		PT				S2			S1	G5					X		
downy milkpea	<i>Galactia volubilis</i>		PX	U	E		SX	SX	SH	S1	G5					X		
Northern bedstraw	<i>Galium boreale</i>								S3S4		G5							X
marsh bedstraw	<i>Galium palustre</i>								S3		G5		X					X
biennial beeblosom	<i>Gaura biennis</i>								S3		G5					X		X
dwarf huckleberry	<i>Gaylussacia dumosa</i>		PE				SH			S1	G5							X
Appalachian gentian	<i>Gentiana austromontana</i>									S1	G3					X		
stiff gentian	<i>Gentianella quinquefolia</i> var <i>quinquefolia</i>								S2		G5T4T5	X						X
bigleaf yellow avens	<i>Geum macrophyllum</i> var <i>macrophyllum</i>			U			S1				G5T5	X						X
chocolate-root	<i>Geum rivale</i>								S3	S1	G5							X
dwarf rattlesnake-plantain	<i>Goodyera repens</i>		*TU				S2			S1S2	G5					X		
checkered rattlesnake plantain	<i>Goodyera tessellata</i>		*PT		E		S1		SH.1		G5							X X
oak fern	<i>Gymnocarpium dryopteris</i>								S2		G5							X
spurred gentian	<i>Halenia deflexa</i>			E			S1				G5							X
Bicknell's frostweed	<i>Helianthemum bicknellii</i>		PE				S2	S3	S1		G5						X	
low frostweed	<i>Helianthemum propinquum</i>		*TU	U			SU	S2S3		S1	G4						X	
smooth sunflower	<i>Helianthus laevis</i>									S2	G4					X		
McDowell sunflower	<i>Helianthus occidentalis</i> ssp <i>occidentalis</i>		*PX				SH			S2	G5T5					X		
Halberd-leaved mallow	<i>Hibiscus laevis</i>									S2	G5					X		

rough hawkweed	<i>Hieracium scabrum</i> var <i>scabrum</i>							S3S4		G5T5	X				X		X
purple bluet	<i>Houstonia purpurea</i> var <i>purpurea</i>		TU	E			SU	SH		G5T5				X		X	
rock clubmoss	<i>Huperzia porophila</i>		PE				S1		S1	G4	X						X
wild hydrangea	<i>Hydrangea arborescens</i>			E			S2			G5	X	X	X	X	X	X	X
broad-leaf waterleaf	<i>Hydrophyllum canadense</i>				E			S1		G5			X		X		X
bushy St. John's wort	<i>Hypericum densiflorum</i>		*PR	E			S3	S1		G5				X	X		
pale St. John's-wort	<i>Hypericum ellipticum</i>							S3		G5					X		X
shrubby St. John's-wort	<i>Hypericum prolificum</i>			T	E		S2	S1		G5					X	X	X
great St. John's-wort	<i>Hypericum pyramidatum</i> (ascyron)							S3		G4							X
mountain holly	<i>Ilex montana</i>				E			S1		G5	X	X	X		X	X	X
American holly	<i>Ilex opaca</i>		PT				S2			G5					X	X	X
lake quillwort	<i>Isoetes lacustris</i>				E			S1.1		G5							X
quillwort	<i>Isoetes riparia</i>			E			S1		SH	G5?							X
butternut	<i>Juglans cinerea</i>							S3S4	S3	G3G4	X	X	X	X	X	X	X
fen rush	<i>Juncus brachycephalus</i>		PT				S2		S3	G5							X
weak rush	<i>Juncus debilis</i>		*TU	E			S3	S1		G5							X
forked rush	<i>Juncus dichotomus</i>		PE				S1		S1	G5					X		
Dudley's rush	<i>Juncus dudleyi</i>							S3		G5		X					X
knotted rush	<i>Juncus nodosus</i> var <i>nodosus</i>							S3S4	S1S2	G5T5?							
woods-rush	<i>Juncus subcaudatus</i>			E			S1			G5					X		X
common juniper	<i>Juniperus communis</i>		*TU				S2			G5							X
pale-laurel	<i>Kalmia polifolia</i>				E			S1		G5							X
downy lettuce	<i>Lactuca hirsuta</i>		*TU	E			S3	S1		G5?					X		X
American larch	<i>Larix laricina</i>							S3S4	S1	G5							X
vetchling	<i>Lathyrus palustris</i>		*PE				S1			G5							X
slender pinweed	<i>Lechea tenuifolia</i>			T	E		S2	S1	S1	G5						X	X
star duckweed	<i>Lemna trisulca</i>							S3		G5							X
violet bush-clover	<i>Lespedeza violacea</i>							S3S4		G5			X			X	X
swamp doghobble	<i>Leucothoe racemosa</i>		*PT				S2S3			G5							X



Northern Blazing Star	<i>Liatris scariosa</i> var. <i>nieuwlandii</i>								S1	G5?T3T5						X		
blazing-star	<i>Liatris spicata</i> var. <i>spicata</i>								S3S4	G5T5?						X		
Appalachian Blazing Star	<i>Liatris turgida</i>								S2	G3						X		
wood lily	<i>Lilium philadelphicum</i> var. <i>philadelphicum</i>								S3	S2S3	G5T4T5		X					X
woodland flax	<i>Linum virginianum</i>								S3S4		G4G5					X	X	X
lilia-leaf twayblade	<i>Liparis lilifolia</i>				T			S1	S3S4		G5			X	X	X	X	X
brook lobelia	<i>Lobelia kalmii</i>		PE				S1		S3S4	S1	G5							X
American fly-honeysuckle	<i>Lonicera canadensis</i>				E				S1	S2	G5	X					X	X
smooth-leaf honeysuckle	<i>Lonicera dioica</i>								S3S4		G5							X
trumpet honeysuckle	<i>Lonicera sempervirens</i> var. <i>sempervirens</i>								S3S4		G5T5							X
Northern bog club-moss	<i>Lycopodiella inundata</i>								S2	S2?	G5							X
Hickey's ground-pine	<i>Lycopodium hickeyi</i>								S1S2?		G5	X						X
climbing fern	<i>Lygodium palmatum</i>				E			S1	S2	S2	G4					X		
lowland yellow-loosestrife	<i>Lysimachia hybrida</i>		*PT	E			S1	S1	S3	S1	G5							X
four-flower yellow-loosestrife	<i>Lysimachia quadriflora</i>		*PX	E			SX	S1		S1	G5?	X		X		X	X	X
Southern loosestrife	<i>Lysimachia tonsa</i>									SH	G4						X	
winged-loosestrife	<i>Lythrum alatum</i>		*PE				S1			S2	G5					X		
starflower false Solomon's-seal	<i>Maianthemum stellatum</i>								S3S4	S1	G5					X		
green adder's-mouth	<i>Malaxis unifolia</i>								S2	S2S3	G5							X
Barbara's buttons	<i>Marshallia grandiflora</i>		PE				S1			S2	G2					X	X	X
Virginia bunchflower	<i>Melanthium virginicum</i>		*TU	E	E		SU	SH	S1		G5							X
two-flower melic grass	<i>Melica mutica</i>									S2	G5					X		
buck-bean	<i>Menyanthes trifoliata</i>								S3	S1	G5							X
Virginia bluebells	<i>Mertensia virginica</i>								S3S4		G5					X		X
winged monkey-flower	<i>Mimulus alatus</i>								S3		G5					X		X
muskflower	<i>Mimulus moschatus</i> var. <i>moschatus</i>								S2		G5T5							X

oswego-tea	<i>Monarda didyma</i>							S2		G5	X			X		X
smokehole bergamot	<i>Monarda fistulosa</i> var. <i>brevis</i>								S1	G5T1					X	
pinemap	<i>Monotropa hypopithys</i>							S3S4		G5						X
sweet pinemap	<i>Monotropis odorata</i>								S1	G3				X		
Chamisso's miners lettuce	<i>Montia chamissoi</i>		PE				S1			G5						X
large-seeded forget-me-not	<i>Myosotis macrosperma</i>								S1	G5				X	X	
slender water nymph	<i>Najas gracillima</i>								S2	G5?			X			
floatingheart	<i>Nymphoides cordata</i>		PT				S2		S3	G5						X
small sundrops	<i>Oenothera perennis</i>							S3S4		G5	X			X		X
evening-primrose	<i>Oenothera pilosella</i> ssp <i>pilosella</i>								S2	G5T5?			X			
Northern adder's tongue	<i>Ophioglossum pusillum</i>							S3	SH	G5						X
adder's tongue	<i>Ophioglossum vulgatum</i>		*PR				S3			G5						X
Eastern prickly-pear cactus	<i>Opuntia humifusa</i>		PR				S3			G5						X
naked broom-rape	<i>Orobanche uniflora</i>							S3S4		G5		X		X	X	X
sidebells	<i>Orthilia secunda</i>							S2		G5						X
white-grained mountain-rice grass	<i>Oryzopsis asperifolia</i>				E			S1	S1	G5						X
violet wood-sorrel	<i>Oxalis violacea</i>			T			S2S3	S3S4		G5			X	X	X	X
American ginseng	<i>Panax quinquefolius</i>							S2		G3G4	X	X		X	X	X
long-leaf panic-grass	<i>Panicum longifolium</i> ( <i>rigidulum</i> var. <i>pubescens</i> )		*PE				SH			G5T5?						X
Pennsylvania pellitory	<i>Parietaria pensylvanica</i>							S3S4		G5			X	X		X
fen grass-of-parnassus	<i>Parnassia glauca</i>		PE				S2			G5						X
smooth cliffbrake	<i>Pellaea glabella</i> spp <i>glabella</i>			T			S2	S2	S2	G5T5			X			
beard-tongue	<i>Penstemon canescens</i>		*TU				S3			G4			X			X
wild kidney bean	<i>Phaseolus polystachios</i> var <i>polystachios</i>		*TU				S1S2		S2	G4T4						X
Northern beech fern	<i>Phegopteris connectilis</i>							S2		G5						X
wild blue phlox	<i>Phlox divaricata</i>				E			S1		G5		X		X		X
black spruce	<i>Picea mariana</i> var <i>mariana</i>							S3S4		G5T5						X

red spruce	<i>Picea rubens</i>				E				S1		G5			X				X
lesser clearweed	<i>Pilea fontana</i>								S3S4		G5							X
red pine	<i>Pinus resinosa</i>				E				S1.1	S1	G5	X	X	X	X	X		
dwarf plantain	<i>Plantago pusilla</i>				E				SH		G5							X
yellow-fringed orchid	<i>Platanthera ciliaris</i>		*PT	E			S2	S1	S2	S2	G5					X		
tuberclad rein orchid	<i>Platanthera flava var herbiola</i>								S2		G4T4Q							X
purple fringed orchid	<i>Platanthera psycodes</i>								S2	S1	G5					X		X
bog blue grass	<i>Poa paludigena</i>		*PR				S3			S1	G3							X
old pasture speargrass	<i>Poa saltuensis (languida)</i>		*PT	E	E		S2		SH	SH	G5					X		X
woodland spear grass	<i>Poa sylvestris</i>			E				S1	SH		G5					X	X	X
threadfoot	<i>Podostemum ceratophyllum</i>			T				S2	S3		G5					X		X
rose pogonia	<i>Pogonia ophioglossoides</i>									S2	G5					X		
Greek-valerian	<i>Polemonium reptans</i>				E				S1		G5					X		X
Curtiss milkwort	<i>Polygala curtissii</i>		PE				S1			S2	G5					X	X	
fringed milkwort	<i>Polygala paucifolia</i>								S3S4		G5	X						X
giant Solomon's-seal	<i>Polygonatum biflorum var commutatum</i>								S3S4		G5T5							X
water smartweed	<i>Polygonum amphibium var emersum</i>									S1	G5T5					X		
fringed black-bindweed	<i>Polygonum cilinode</i>								S3		G5	X				X		X
slender knotweed	<i>Polygonum tenue</i>								S3S4		G5							X
bear's foot	<i>Polymnia uvedalia (Smallanthus uvedalius)</i>		*PT	E	E		SR	SH	S1		G4G5					X	X	X
pickerel weed	<i>Pontederia cordata</i>									S1	G5					X		
balsam poplar	<i>Populus balsamifera</i>		PE				S1			S1	G5							X
indian physic	<i>Porteranthus trifolius</i>								S2		G4G5					X		X
Illinois pondweed	<i>Potamogeton illinoensis</i>		*PR		E		S3S4		S1	SH	G5							X
floating pondweed	<i>Potamogeton natans</i>								S3S4		G5							X
long-leaf pondweed	<i>Potamogeton nodosus</i>								S3S4		G5					X		X
red-head pondweed	<i>Potamogeton richardsonii</i>		*PR				S3				G5							X
spiral pondweed	<i>Potamogeton spirillus</i>								S3S4	S2	G5							X
tall cinquefoil	<i>Potentilla arguta var. arguta</i>								S3		G5T5?		X					X

shrubby cinquefoil	<i>Potentilla fruticosa</i> [ <i>Dasiphora (Pentaphylloides)</i> <i>floribunda</i> ]	PE			S1				G5								X	
Alleghany plum	<i>Prunus alleghaniensis</i> var <i>alleghaniensis</i>	*PT		E	S2S3		S1	S3	G4T4							X		
sand cherry	<i>Prunus pumila</i>							S1	G5						X		X	
low sand cherry	<i>Prunus pumila</i> var <i>depressa</i>	*PE	T		S1	S2	S2		G5T5								X	X
Appalachian cherry	<i>Prunus pumila</i> var <i>susquehanae</i>	*PT			S2		S3		G5T4								X	
hoary mountain-mint	<i>Pycnanthemum incanum</i> var <i>puberulum</i>							S1	G5T4?					X				
Loomis' mountain-mint	<i>Pycnanthemum loomisii</i>							S1	G4?					X				
Torrey's mountain-mint	<i>Pycnanthemum torrei</i>		E			S1		S1	G2					X				
dwarf chestnut oak	<i>Quercus prinoides</i>						S3S4		G5								X	
early buttercup	<i>Ranunculus fascicularis</i>	PE		E	S1S2		S1		G5								X	
long-beak water-buttercup	<i>Ranunculus longirostris</i>						S2		G5								X	
bristly crowfoot	<i>Ranunculus pensylvanicus</i>						S3	S1	G5	X				X				
low spearwort	<i>Ranunculus pusillus</i>	*PE	U		S1	SX		S1	G5					X				
thread-leaf water-crowfoot	<i>Ranunculus trichophyllus</i> var <i>trichophyllus</i>						S2	SH	G5T5								X	
alder-leaf buckthorn	<i>Rhamnus alnifolia</i>						S3S4	S1	G5								X	
globe beaked-rush	<i>Rhynchospora globularis</i>	*TUXH		E	SU		S1	S2	G5?						X			
prickly gooseberry	<i>Ribes cynosbati</i>			E			SH		G5					X	X		X	
skunk currant	<i>Ribes glandulosum</i>			E			S1.1		G5								X	
bristly black currant	<i>Ribes lacustre</i>	*PE			S1			S1	G5							X		
smooth rose	<i>Rosa blanda</i> var <i>blanda</i>	*TUTFN			SU		SH	S2	G5T5								X	
Virginia rose	<i>Rosa virginiana</i>	TU			S1				G5	X							X	X
smooth blackberry	<i>Rubus canadensis</i>			E			S1		G5								X	
small bristleberry	<i>Rubus setosus</i>	TU			SH		SH.1		G5								X	
sage willow	<i>Salix candida</i>	*PE			S1		S2		G5								X	
shinning willow	<i>Salix lucida</i> ssp <i>lucida</i>						S1	S1	G5T5					X			X	
autumn willow	<i>Salix serissima</i>	PT			S2		S2		G4								X	
Carey saxifrage	<i>Saxifraga careyana</i>							S3	G3					X				

swamp saxifrage	<i>Saxifraga pensylvanica</i>							S3S4	S2	G5								X
weakstalk bulrush	<i>Schoenoplectus (Scirpus) purshianus</i>								S2	G4G5				X				
woodland bulrush	<i>Scirpus expansus</i>							S3S4		G4				X			X	
Barber pole bulrush	<i>Scirpus microcarpus</i>				E			S1	S3	G5							X	
stalked bulrush	<i>Scirpus pedicellatus</i>		PT		E		S1	SH		G4							X	
heart-leaved skullcap	<i>Scutellaria ovata</i> spp <i>ovata</i>								S1	G5T5				X		X		
rock skullcap	<i>Scutellaria saxatilis</i>		*PE				S1		S2	G3				X	X	X		
roseroot stonecrop	<i>Sedum rosea</i>		PE	E			S1	S1		G5								X
rock spike-moss	<i>Selaginella rupestris</i>							S2		G5				X			X	
balsam squaw-weed	<i>Senecio pauperculus (Packera paupercula)</i>							S3	S1	G5					X	X	X	
Virginia mallow	<i>Sida hermaphrodita</i>		PE				S2		S2	G2G3				X				
snowy catchfly	<i>Silene nivea</i>				E			S1	S1	G4?				X			X	
Virginia cup-plant	<i>Silphium perfoliatum</i> var <i>connatum</i>								S1	G5T3?				X				
strict blue-eyed grass	<i>Sisyrinchium montanum</i>				E			S2		G5			X	X			X	
Michaux's blue-eyed grass	<i>Sisyrinchium mucronatum</i>			E			S1			G5	X			X				X
downy carrion-flower	<i>Smilax pulverulenta</i>			E			S1	S3S4		G4G5				X			X	
sticky golden-rod	<i>Solidago simplex</i> ssp <i>randii</i> var <i>racemosa</i>		PE				S1		S1	G5T3?				X	X			
showy goldenrod	<i>Solidago speciosa</i> var <i>speciosa</i>		*PT				SR	S3		G5T5?				X			X	
bog goldenrod	<i>Solidago uliginosa</i> var <i>uliginosa</i>		*TU				S3	S2S3		G4G5T4T5							X	
sphagnum	<i>Sphagnum centrale</i>							S1		G5							X	
swamp oats	<i>Sphenopholis pensylvanica</i>			E			S1	S2		G4							X	
narrow-leaf meadow-sweet	<i>Spiraea alba</i> var <i>alba</i>							S1		G5T5					X		X	
Virginia spiraea	<i>Spiraea virginia</i>	LT							S1	G2				X	X			
shining ladies'-tresses	<i>Spiranthes lucida</i>		*TU				S3	S2	S1S2	G5							X	
yellow nodding ladies'-tresses	<i>Spiranthes ochroleuca</i>							S3		G4							X	
ladies'-tresses	<i>Spiranthes ovalis</i> var								S1	G5?T4?				X				

	<i>erostellata</i>																	
little ladies' -tresses	<i>Spiranthes tuberosa</i>		*PE				S1		S3	S2	G5					X		X
rough dropseed	<i>Sporobolus clandestinus</i>		PE	E			S1	S1		S1	G5					X		
Nuttall's hedge-nettle	<i>Stachys nuttallii</i>		PE				S1			S3	G5?					X	X	
smooth hedge-nettle	<i>Stachys tenuifolia var tenuifolia</i>								S3	S2	G5T4Q					X		
star chickweed	<i>Stellaria pubera</i>				E				SH		G5			X		X	X	X
white twistedstalk	<i>Streptopus amplexifolius</i>		PE		E		S1		S1		G5							X
rosy twistedstalk	<i>Streptopus lanceolatus var roseus</i>				E				S1		G5T3?					X		X
white heath aster	<i>Symphyotrichum (Aster) ericoides var ericoides</i>		TU				S3		S1		G5T5							X
long-leaved aster	<i>Symphyotrichum (Aster) novi- belgii</i>		PT				S2			S2S3	G5					X		
veiny-lined aster	<i>Symphyotrichum praealtum (Aster praealtus)</i>		*TU		E		S3		S1		G5		X				X	
crooked-stem aster	<i>Symphyotrichum (Aster) prenanthoides</i>								S2		G4G5	X	X		X	X	X	X
Tradescant's aster	<i>Symphyotrichum (Aster) tradescantii</i>								S2		G4Q							X
American yew	<i>Taxus canadensis</i>								S2		G5							X
American germander	<i>Teucrium canadense var canadense</i>								S3S4		G5T5					X	X	X
mountain meadow-rue	<i>Thalictrum clavatum</i>									S1	G4					X	X	
waxy meadow rue	<i>Thalictrum revolutum</i>								S3S4		G5					X		X
white cedar	<i>Thuja occidentalis</i>				E				S1	S2	G5	X					X	X
foamflower	<i>Tiarella cordifolia</i>				E				S1		G5	X	X	X		X	X	X
poison-oak	<i>Toxicodendron pubescens</i>								S3		G5							X
Ohio spiderwort	<i>Tradescantia ohiensis</i>								S2		G5					X		X
Fraser's St. John's-wort	<i>Triadenum fraseri</i>								S3		G5							X
whip-poor-will-flower	<i>Trillium cernuum</i>		*TU				S3			S1	G5					X		X
red trillium	<i>Trillium erectum</i>								S3S4		G5		X	X		X	X	X
painted trillium	<i>Trillium undulatum</i>								S3		G5					X	X	X
nodding pogonia	<i>Triphora trianthophora</i>		PE	E			SH	S2		S2	G3G4					X		

narrow false oat	<i>Trisetum spicatum</i>		*PE				S1				G5							X
spreading globe flower	<i>Trollius laxus ssp laxus</i>			R	E			S3	S1		G4T3							X
purple bladderwort	<i>Utricularia purpurea</i>								S3		G5							X
small cranberry	<i>Vaccinium oxycoccos</i>								S2	S2	G5							X
beaked corn-salad	<i>Valerianella radiata</i>				E				S1	S2	G5					X		
witch-hobble	<i>Viburnum lantanoides (alnifolium)</i>				E				S1		G5							X
nannyberry	<i>Viburnum lentago</i>									S1S2	G5				X	X	X	
downy arrow-wood	<i>Viburnum rafinesquianum</i>									S2	G5						X	X
high-bush cranberry	<i>Viburnum trilobum (opulus var americanum)</i>		*PR				S3S4		S3	S1	G5T5							X
American purple vetch	<i>Vicia americana var americana</i>								S2		G5T5					X		X
Appalachian blue violet	<i>Viola appalachiensis</i>		*TU				S2			S2S3	G3		X				X	X
large-leaf white violet	<i>Viola blanda var palustriformis</i>								S3	SH	G4G5T4T5							X
long-spur violet	<i>Viola rostrata</i>								S3S4		G5	X				X	X	X
round-leaf violet	<i>Viola rotundifolia</i>								S3S4	SH	G5	X	X	X		X	X	X
New England grape	<i>Vitis novae-angliae</i>		PE				S1				G4G5Q							X
sand grape	<i>Vitis rupestris</i>		*PE				S1			S1	G3					X	X	
barren-strawberry	<i>Waldsteinia fragarioides var fragarioides</i>								S2		G5T5	X						X
pointed watermeal	<i>Wolffia brasiliensis</i>								S3S4		G5							X
rusty cliff fern	<i>Woodsia ilvensis</i>								S3S4	S2	G5							X
Carolina yellow-eyed-grass	<i>Xyris caroliniana</i>				E				S1		G4G5							X

FISH																			
bowfin	<i>Amia calva</i>		CR				S2S3				G5							X	
slimy sculpin	<i>Cottus cognatus</i>								S3		G5	X			X			X	
finescale saddled darter	<i>Etheostoma osburni</i>									S2	G3					X			
American brook lamprey	<i>Lampetra appendix</i>		CR				S3		S2		G4							X	
river (bigmouth) chub	<i>Nocomis platyrhynchus</i>									S3S4	G4Q				X	X			
bridle shiner	<i>Notropis bifrenatus</i>		PE				S1S2				G5							X	
swallowtail shiner	<i>Notropis procne</i>			U				S2			G5							X	X
New River shiner	<i>Notropis scabriceps</i>									S2	G4				X				
tadpole madtom	<i>Noturus gyrinus</i>		PE				S1				G5							X	
Appalachia darter	<i>Percina gymnocephala</i>									S3	G4				X				
shield darter	<i>Percina peltata</i>								S3		G5							X	X
mountain redbelly dace	<i>Phoxinus oreas</i>									S3	G5				X				
brook trout	<i>Salvelinus fontinalis</i>								S3		G5	X						X	X



BIRDS																			
Cooper's hawk	<i>Accipiter cooperii</i>				T/T				S3BS4N	S3BS4	G5	X		X			X	X	X
Northern goshawk	<i>Accipiter gentilis</i>		CR		E/		S2S3S3N		S1BS4N	S1BS1N	G5				X				X
sharp-shinned hawk	<i>Accipiter striatus</i>				SC/SC				S2BS3N	S3BS4N	G5			X	X	X	X	X	X
spotted sandpiper	<i>Actitis macularia</i>				SC/S				S3B	S3B	G5			X		X	X		X
Northern saw-whet owl	<i>Aegolius acadicus</i>		CU				S3BS3N		S1BS3N	S2BS3N	G5	X			X				X
Henslow's sparrow	<i>Ammodramus henslowii</i>			T	E/E		S3BSAN		S1B	S1B	G4		X						X
grasshopper sparrow	<i>Ammodramus savannarum</i>				T/SC				S2B	S3B	G5		X	X	X				X
green-winged teal	<i>Anas crecca</i>		CR				S1S2BS3N			SHBS2N	G5						X	X	X
American black duck	<i>Anas rubripes</i>									S2BS4N	G5						X	X	X
great blue heron	<i>Ardea herodias</i>				SC/S				S2BS4N	S2BS4N	G5	X		X	X		X	X	X
short-eared owl	<i>Asio flammeus</i>		PE	E	E/SC		S1BS3N	S2	SHBS3N	S1BS2N	G5								X
long-eared owl	<i>Asio otus</i>		CR		T/T		S2BS2S3N		S2BS2N	S1BS1N	G5								X
American bittern	<i>Botaurus lentiginosus</i>		PE		E/SC		S1B		S2B	S1BS1N	G4								X
red-shouldered hawk	<i>Buteo lineatus</i>				E/T				S1BS2N		G5	X	X	X	X	X	X	X	X
broad-winged hawk	<i>Buteo platypterus</i>				SC/S				S3B		G5	X	X	X	X	X	X	X	X
whip-poor-will	<i>Caprimulgus vociferus</i>								S4B	S3B	G5						X		X
purple finch	<i>Carpodacus purpureus</i>								S3BS4N			X	X	X	X				X
veery	<i>Catharus fuscescens</i>				SC/S				S3B		G5	X		X			X		X
gray-cheeked thrush	<i>Catharus minimus</i>				/SC				SNA		G5			X					X
Swainson's thrush	<i>Catharus ustulatus</i>		CR				S2S3BS5N			S1B	G5	X		X	X	X	X		X
brown creeper	<i>Certhia americana</i>									S3BS4N	G5	X	X	X	X		X		X
common nighthawk	<i>Chordeiles minor</i>				SC/S				S3B	S3B	G5			X					X

Northern harrier	<i>Circus cyaneus</i>		CA	T	E/SC		S3BS4N	S3BS3N	S1BS3N	S1BS3N	G5							X	
marsh wren	<i>Cistothorus palustris</i>		CR				S2S3B		S4BS4N	S1B	G5							X	
black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>									S3B	G5	X		X	X	X	X	X	
Northern bobwhite	<i>Colinus virginianus</i>		CA				SZS3			S3BS3N	G5			X			X		
olive-sided flycatcher	<i>Contopus cooperi (boreals)</i>									S1B	G4			X		X		X	
black vulture	<i>Coragyps atratus</i>									S3BS4N	G5			X	X		X		X
common raven	<i>Corvus corax</i>								S1BSZN		G5	X		X	X	X	X	X	X
cerulean warbler	<i>Dendroica cerulea</i>				SC/SC				S3B		G4	X		X	X	X	X	X	X
black-throated blue warbler	<i>Dendroica caerulescens</i>								SNRB		G5	X	X		X	X	X		X
yellow-rumped warbler	<i>Dendroica coronata</i>									S3BS3N	G5	X	X	X	X	X	X	X	
blackburnian warbler	<i>Dendroica fusca</i>								S2B	S3B	G5	X	X	X	X	X	X		X
magnolia warbler	<i>Dendroica magnolia</i>								S1B		G5	X		X	X	X	X		X
chestnut-sided warbler	<i>Dendroica pensylvanica</i>								S3B		G5	X	X	X	X	X	X	X	X
black-throated green warbler	<i>Dendroica virens</i>				SC/S				S3B		G5	X	X	X	X	X	X	X	X
bobolink	<i>Dolichonyx oryzivorus</i>				T/				S2B	S2B	G5		X	X					X
little blue heron	<i>Egretta caerulea</i>			P	SC/SC			S2	S2B		G5								X
snowy egret	<i>Egretta thula</i>			P				S2S3	S3BS4N		G5								X
tricolored heron	<i>Egretta tricolor</i>			P	SC/S			S2	S3B		G5								X
alder flycatcher	<i>Empidonax alnorum</i>								S2B	S3BS4N	G5		X		X				X
yellow-bellied flycatcher	<i>Empidonax flaviventris</i>		PT				S1S2B			S1B	G5				X	X			
least flycatcher	<i>Empidonax minimus</i>				SC/S				S3B		G5	X		X	X		X		X
horned lark	<i>Eremophila alpestris</i>				SC/S				S3BS4N		G5								X
peregrine falcon	<i>Falco peregrinus</i>		PE	E	E/E		S1BS1N	S3BSZN	S1BSNRN	S1BS2N	G4					X	X		X

American kestrel	<i>Falco sparverius</i>				SC/U			S3BSNRN		G5		X	X				X	
American coot	<i>Fulica americana</i>		CR				S3BS3N	S1B	S1BS3N	G5					X		X	
common snipe	<i>Gallinago gallinago</i>		CR				S3BS3N	S3S4		G5							X	
bald eagle	<i>Haliaeetus leucocephalus</i>	LT	PE	T	E/T		S2B	S2S3BS	S1BS2N	S2BS3N	G4		X		X		X	X
worm-eating warbler	<i>Helmitheros vermivorus</i>							S3B		G5	X		X	X	X	X	X	
yellow-breasted chat	<i>Icteria virens</i>				SC/SC			S3B		G5	X		X	X	X		X	
least bittern	<i>Ixobrychus exilis</i>		PE		SC/S		S1B	S3B		G5							X	
dark-eyed junco	<i>Junco hyemalis</i>							S1BS5N		G5	X	X	X	X	X	X	X	X
Swainson's warbler	<i>Limnithylpis swainsonii</i>								S2BS2N	G4					X	X		
hooded merganser	<i>Lophodytes cucullatus</i>								S1BS4N	G5					X	X		
red-headed woodpecker	<i>Melanerpes erythrocephalus</i>				T/T			S2BS2N	S2BS3N	G5					X	X		X
black-crowned night-heron	<i>Nycticorax nycticorax</i>		CA		T/		S2S3B	S3BS4N	SHB	G5					X		X	
Kentucky warbler	<i>Oporornis formosus</i>			P	SC/SC		S2	S3B		G5			X	X	X		X	
osprey	<i>Pandion haliaetus</i>		PT		T/		S2B	S2B	S2BS2N	G5			X		X	X	X	
Northern parula	<i>Parula americana</i>				SC/S			S3B		G5	X		X	X			X	
savannah sparrow	<i>Passerculus sandwichensis</i>				T/			S2BS4N		G5	X	X					X	
cliff swallow	<i>Petrochelidon pyrrhonota</i>				SC/S			S2B	S3B	G5							X	
double-crested cormorant	<i>Phalacrocorax auritus</i>							S1BS4N		G5							X	
summer tanager	<i>Piranga rubra</i>		CR				S3B			G5			X		X		X	
pie-billed grebe	<i>Podilymbus podiceps</i>		CR	T	E/SC		S3BS4N	S3BS1N	S1BS3N	S2BS4N	G5					X	X	X
vesper sparrow	<i>Pooecetes gramineus</i>				E/T			S1BS2N	S3BS3N	G5	X	X	X	X			X	
prothonotary warbler	<i>Protonotaria citrea</i>		CR	P			S2S3B	S2		S2B	G5						X	

Virginia rail	<i>Rallus limicola</i>						S3B			S1BS1N	G5							X	
Northern waterthrush	<i>Seiurus noveboracensis</i>									S2B	G5	X		X			X	X	X
Caspian tern	<i>Sterna caspia</i>			P	SC/S			S1	SPB		G5							X	
common tern	<i>Sterna hirundo</i>		PE	T	SC/S		SXB	S3B	S3B		G5							X	
barred owl	<i>Strix varia</i>								S3B		G5		X	X	X		X	X	X
Eastern meadowlark	<i>Sturnella magna</i>				SC/S				S3BS4N		G5	X	X	X	X			X	
winter wren	<i>Troglodytes troglodytes</i>				SC/S				S3BS4N		G5	X	X		X	X	X	X	X
barn owl	<i>Tyto alba</i>		CA	P	SC/SC		S3BS3N	S3	S3B	S1BS1N	G5							X	
golden-winged warbler	<i>Vermivora chrysoptera</i>				SC/SC				S3B	S2B	G4				X	X		X	
Nashville warbler	<i>Vermivora ruficapilla</i>								S1BSZN	S1B	G5	X		X	X			X	
solitary vireo	<i>Vireo solitarius</i>				SC/S				S3B		G5	X	X	X	X	X	X	X	X
Canada warbler	<i>Wilsonia canadensis</i>				SC/S				S3B		G5	X		X	X	X	X	X	X
hooded warbler	<i>Wilsonia citrina</i>								S3B		G5	X		X	X	X	X	X	X

MAMMALS																			
Rafinesque's big-eared bat	<i>Corynorhinus rafinesquii</i>									S1	G3G4					X			
Virginia big-eared bat	<i>Corynorhinus townsendii virginianus</i>	LE								S1	G4T2					X			
least shrew	<i>Cryptotis parva</i>		E	U			S1	SH		S2	G5							X	
silver-haired bat	<i>Lasionycteris noctivagans</i>		PR				SUB		SU	S2	G5					X		X	
red bat	<i>Lasiurus borealis</i>								SU		G5				X	X	X	X	X
hoary bat	<i>Lasiurus cinereus</i>								SU		G5					X	X	X	
bobcat	<i>Lynx (Felis) rufus</i>			E					S3		G5					X	X		X
Fisher	<i>Martes pennanti</i>		PX				SC				G5				X				
small-footed myotis	<i>Myotis leibii</i>		T	USC			S1BS1N	S2		S1	G3					X	X	X	
Northern myotis	<i>Myotis septentrionalis</i>						S3BS3N		SU		G4	X				X	X	X	X
Indiana bat	<i>Myotis sodalis</i>	LE	E	E	E		SUBS1N	S1	S1	S1	G2					X			
Allegheny woodrat	<i>Neotoma magister (floridana)</i>		T	E	E		S3	S1	S1	S3	G3G4					X	X	X	X
golden mouse	<i>Ochrotomys nuttalli</i>									S2	G5					X			
Eastern pipistrelle	<i>Pipistrellus subflavus</i>								SU		G5	X				X	X	X	X
Eastern mole	<i>Scalopus aquaticus</i>									S3	G5							X	
longtail shrew	<i>Sorex dispar</i>									S2S3	G4					X	X		
pygmy shrew	<i>Sorex hoyi winnemana</i>									S2S3	G5T4					X		X	
Northern water shrew	<i>Sorex palustris</i>						S3				G5T5								X
southern bog lemming	<i>Synaptomys cooperi</i>									S2	G5					X			
black bear	<i>Ursus americanus</i>	T(S/A)							S3		G5				X	X	X		X
meadow jumping mouse	<i>Zapus hudsonius</i>									S3	G5							X	

<b>AMPHIBIANS</b>																				
Northern cricket frog	<i>Acris crepitans crepitans</i>			E				S1	S3	S2	G5T5								X	
Jefferson salamander	<i>Ambystoma jeffersonianum</i>				SC				S3	S3	G4					X	X	X	X	
spotted salamander	<i>Ambystoma maculatum</i>								S3		G5					X	X	X	X	X
marbled salamander	<i>Ambystoma opacum</i>				SC				S3		G5							X	X	
silvery salamander	<i>Ambystoma X platineum</i>								S3		HYB								X	
green salamander	<i>Aneides aeneus</i>		PT				S1			S3	G3G4					X	X	X		
mountain dusky salamander	<i>Desmognathus ochrophaeus</i>								SH		G5				X	X	X	X	X	X
black-bellied salamander	<i>Desmognathus quadramaculatus</i>									S3	G5					X	X	X		
long-tailed salamander	<i>Eurycea longicauda</i>			USC	T			S2S3	S2		G5						X	X	X	
cave salamander	<i>Eurycea lucifuga</i>									S3	G5					X		X		
Northern spring salamander	<i>Gyrinophilus porphyriticus</i>				SC				S3		G5						X	X	X	X
four-toed salamander	<i>Hemidactylium scutatum</i>								S3		G5					X	X	X	X	X
midland mud salamander	<i>Pseudotriton montanus diastictus</i>									S1	G5T5					X				
Northern red salamander	<i>Pseudotriton ruber</i>									S3	G5					X	X	X	X	X
<b>REPTILES</b>																				
Northern copperhead	<i>Agkistrodon contortrix mokasen</i>				SC				S4		G5T5					X	X	X	X	X
Eastern worm snake	<i>Carphophis amoenus amoenus</i>									S3	G5						X		X	
wood turtle	<i>Clemmys (Glyptemys) insculpta</i>				T				S3	S2	G4								X	
bog turtle	<i>Clemmys (Glyptemys) muhlenbergii</i>	LT	PE		E		S2		S2		G3								X	

timber rattlesnake	<i>Crotalus horridus horridus</i>		CA	T	E		S3S4	S3	S2	S3	G4T4					X	X		X	X
common five-lined skink	<i>Eumeces fasciatus</i>								S3		G5					X	X	X	X	
broad-headed skink	<i>Eumeces laticeps</i>		CR				S1			S2	G5					X	X			
Northern map turtle	<i>Graptemys geographica</i>								S3	S2	G5					X	X		X	X
smooth green snake	<i>Liochlorophis (Opheodrys) vernalis</i>								S3		G5								X	
rough greensnake	<i>Opheodrys aestivus</i>									S3	G5					X		X		
river cooter	<i>Pseudemys concinna</i>									S2	G5					X				
redbelly turtle	<i>Pseudemys rubriventris</i>		CA				S2			S2	G5								X	

<b>INVERTEBRATES</b>																			
MUSSELS																			
dwarf wedgemussel	<i>Alasmidonta heterodon</i>	LE	*PX	E	E		S1	S1	S1		G1G2							X	X
elktoe	<i>Alasmidonta marginata</i>									S2	G4				X				
Triangle floater	<i>Alasmidonta undulata</i>				T				S3	S1	G4							X	
brook floater	<i>Alasmidonta varicosa</i>		*PE	T	E		S2	S1	S1	S1	G3							X	X
alewife floater	<i>Anodonta implicata</i>		*CU	U			SH	S1S2			G5							X	X
purple wartyback	<i>Cyclonaias tuberculata</i>		PX				SX			S1	G5				X				
Spike mussel	<i>Elliptio dilata</i>									S2S3	G5				X				
yellow lampmussel	<i>Lampsilis cariosa</i>		*CU	U	T		S3S4	S3	S1	S1	G3G4							X	
wavy-rayed lampmussel	<i>Lampsilis fasciola</i>			T				S1		S2	G4				X				
pocketbook	<i>Lampsilis ovata</i>			U				S2S3		S1	G5				X				
Eastern pearlshell	<i>Margaritifera margaritifera</i>		*PE	U			S1	S2			G4								X
Mapleleaf	<i>Quadrula quadrula</i>									S2	G5				X				
Creeper mussel	<i>Strophitus undulatus</i>				SC				S4		G5							X	
Pistolgrip mussel	<i>Tritogenia verrucosa</i>		PE				S1			S2	G4				X				
BUTTERFLIES AND MOTHS																			
Northern metalmark	<i>Calephelis borealis</i>									S2	G3G4							X	
black dash	<i>Euphyes conspicua</i>						S3	S3S4		S1	G4			X					
a borer moth	<i>Papaipema marginidens</i>			U			SU	SH			G4			X					
Diana fritillary	<i>Speyeria diana</i>									S2S3	G3G4				X	X			
DRAGON & DAMSELFLIES																			



ocellated darner	<i>Boyeria grafiana</i>						S3	S3S4	S1S2		G5								X	
superb jewelwing	<i>Calopteryx amata</i>						S2S3	S3	S1	S2	G4								X	
spine-crowned clubtail	<i>Gomphus abbreviatus</i>			U			S2	S2S3	S2S3	S1	G3G4								X	X
moustached clubtail	<i>Gomphus adelphus</i>						S?		S1	S2	G4								X	
rapids clubtail	<i>Gomphus quadricolor</i>			U			S1S2	S1S2	S2	S2	G3G4									X
cobra clubtail	<i>Gomphus (Gomphurus) vastus</i>			U				SH	S1S2	S2	G5									X
dragonhunter	<i>Hagenius brevistylus</i>								S3S4		G5								X	
Uhler's sunfly	<i>Helocordulia uhleri</i>						S3				G5								X	
American rubyspot	<i>Hetaerina americana</i>			U				S2S3	S3		G5									X
Southern pygmy clubtail	<i>Lanthus vernalis</i>								S2S3	S1	G4								X	
umber shadowdragon	<i>Neurocordulia obsoleta</i>								S1		G4								X	
stygian shadowdragon	<i>Neurocordulia yamaskanensi</i>								S1S2	S2	G5								X	
extra-striped snaketail	<i>Ophiogomphus anomalus</i>			USC				S1			G3									X
BEETLES																				
cobblestone tiger beetle	<i>Cicindela marginipennis</i>			U			SX	S1	S1	S1	G2G3								X	X
marginated burying beetle	<i>Nicrophorus marginatus</i>						SX				G?								X	
GASTROPODS																				
cherrystone drop	<i>Hendersonia occulta</i>									S1S2	G4								X	

## Explanation of Global Element Ranks

NatureServe in conjunction with its member programs has developed a consistent method for evaluating the relative imperilment of both species and ecological communities. These assessments lead to the designation of a conservation status rank that provides a scientific and objective assessment of a taxon's rarity and level of threat to its existence. Each element is ranked according to its global, national, and state, or subnational rarity. These ranks are used to prioritize conservation work so that the most endangered elements receive attention first.

Note: The definitions below were taken from the Pennsylvania Natural Heritage Program's website: <http://www.dcnr.state.pa.us/forestry/pndi/>. New definitions for the Global Conservation Status System (formerly the Global Ranking System) can be found at NatureServe's website: <http://www.natureserve.org/explorer/ranking.htm#globalstatus>

### **GLOBAL ELEMENT RANKS**

**GX = Presumed Extinct:** Believed to be extinct throughout its range. Not located despite intensive searches of historic sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.

**GH = Possibly Extinct:** Known from only historical occurrences. Still some hope of rediscovery.

**G1 = Critically Imperiled:** Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. Typically 5 or fewer occurrences or very few remaining individuals (<1,000) or acres (<2,000) or stream miles (<10).

**G2 = Imperiled:** Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or stream miles (10 to 50).

**G3 = Vulnerable:** Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.

**G4 = Apparently Secure:** Uncommon but not rare, and usually widespread. Possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.

**G5 = Secure:** Common, typically widespread and abundant. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

### ***VARIANT GLOBAL RANKS***

G#G# = Range Rank - A numeric range rank (e.g., G2G3) is used to indicate uncertainty about the exact status of a taxon.

GU = Unrankable: Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

G? = Unranked: Global rank not yet assessed.

HYB = Hybrid: Element represents an interspecific hybrid.

#### *RANK QUALIFIERS*

? = Inexact Numeric Rank: Denotes inexact numeric rank.

Q = Questionable Taxonomy: Taxonomic status is questionable; numeric rank may change with taxonomy.

C = Captive or Cultivated Only: Taxon at present is extant only in captivity or cultivation, or as a reintroduced population not yet established.

#### *INFRASPECIFIC TAXON RANKS*

T = Intraspecific Taxon (trinomial): The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species= basic rank (e.g., a G1T2 subrank should not occur). A population (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an infraspecific taxon and given a T rank; in such cases a Q is used after the T rank to denote the taxon's questionable taxonomic status.

## Explanation of Federal Status Codes

**Native Plant and Animal Species Legislative Authority:** United States Endangered Species Act of 1973: Public Law 93-205. U.S. Fish and Wildlife Service.

Note: Information taken from the Pennsylvania Natural Heritage Program/Pennsylvania Department of Conservation and Natural Resources:  
<http://www.dcnr.state.pa.us/forestry/pndi/rank.htm>

### Federal Status Codes

LE = Listed Endangered: A species which is in danger of extinction throughout all or a significant portion of its range.

LT = Listed Threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

LELT = Listed Endangered in part of range; listed Threatened in the remaining part.

PE = Proposed Endangered: Taxa proposed to be listed as endangered.

PT = Proposed Threatened: Taxa proposed to be listed as threatened.

PEPT = Proposed Endangered in part of range; proposed Threatened in the remaining part.

C = Candidate for listing.

E(S/A) = Treat as Endangered because of similarity of appearance.

T(S/A) = Treat as Threatened because of similarity of appearance.

XE = Essential Experimental population.

XN = Nonessential Experimental population.

"xy" (mixed status) = Status varies for different populations or parts of range.

"x" NL = Status varies for different populations or parts of range with at least one part not listed.

(PS) = Indicates “partial status”: status in only a portion of the species’ range. Typically indicated in a “full” species record where an infraspecific taxon or population has Federal status, but the entire species does not.

## Explanation of New Jersey Rank and Status Codes

### **STATE ELEMENT RANKS: PLANTS AND ANIMALS**

S1 = Critically imperiled in New Jersey because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres). Species ranked S1 are often restricted to specialized habitats and/or restricted to an extremely small (3%) geographical area of the state. Also included are species which were formerly more abundant, but because of habitat destruction or some other critical factor of its biology, they have been demonstrably reduced in abundance. In essence, these are species for which, even with intensive searching, sizable additional occurrences are unlikely to be discovered.

S2 = Imperiled in New Jersey because of rarity (6 to 20 occurrences). Historically many of these species may have been more frequent, but now, largely through habitat destruction, are known from fewer extant occurrences. The S2 rank also includes species which occur in habitats restricted to 10 % of the total state area.

S3 = Rare in state with 21 to 100 occurrences (plant species in this category have only 21 to 50 occurrences). Includes species which are widely distributed in the state but often occurring in small populations, and also in habitats which may be common or widespread. Species having a moderately restricted distribution (but greater than 10%) in New Jersey, but are locally abundant, are also included. Species ranked S3 are not yet imperiled in state but may soon be if additional populations are destroyed.

S4 = Apparently secure in state, with many occurrences.

S5 = Demonstrably secure in state and essentially ineradicable under present conditions.

SA = Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and vice-versa.

SE = Species that are clearly exotic in New Jersey including those taxa not native to North America (introduced taxa) or taxa deliberately or accidentally introduced into the State from other parts of North America (adventive taxa). Taxa ranked SE are not a conservation priority (viable introduced occurrences of G1 or G2 elements may be exceptions).

SH = Species of historical occurrence in New Jersey. Despite some searching of historical occurrences and/or potential habitat, no extant occurrences have been confirmed. Since not all of the documented historical occurrences have been field surveyed, and unsearched potential habitat remains, historically ranked taxa are considered possibly extant, and remain a conservation priority for continued field work.

SP = Element has potential to occur in New Jersey, but no occurrences have been reported.

SR = Species reported from New Jersey, but without persuasive documentation which would provide a basis for either accepting or rejecting the report. In some instances documentation may exist, but as of yet, its source or location has not been determined.

SRF = Species erroneously reported from New Jersey, but this error persists in the literature.

SU = Species believed to be in peril but the degree of rarity is uncertain. Also included are rare taxa of uncertain taxonomical standing. More information is needed to resolve rank.

SX = Species that have been determined or are presumed to be extirpated from New Jersey. All historical occurrences have been searched (or are conclusively known to have been destroyed), and a reasonable search of potential habitat has been completed. Extirpated taxa are not a current conservation priority.

SXC = Species presumed extirpated from New Jersey, but native populations collected from the wild exist in cultivation.

SZ = Not of practical conservation concern in New Jersey, because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations are too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped and protected. In other words, the migrant regularly passes through the state, but enduring, mappable element occurrences cannot be defined.

Typically, the SZ rank applies to a non-breeding population (N) in the state - for example, birds on migration. An SZ rank may in a few instances also apply to a breeding population (B), for example certain lepidoptera which regularly die out every year with no significant return migration.

Although the SZ rank typically applies to migrants, it should not be used indiscriminately. Just because a species is on migration does not mean it receives an SZ rank. SZ will only apply when the migrants occur in an irregular, transitory and dispersed manner.

B = Refers to the breeding population of the element in the state.

N = Refers to the non-breeding population of the element in the state.

T = Element ranks containing a "T" indicate that the infraspecific taxon is being ranked differently than the full species. For example *Stachys palustris* var. *homotricha* is ranked "G5T? SH" meaning the full species is globally secure but the global rarity of the var. *homotricha* has not been determined; in New Jersey the variety is ranked historic.

Q = Elements containing a "Q" in the global portion of its rank indicates that the taxon is of questionable, or uncertain taxonomical standing, e.g., some authors regard it as a full species, while others treat it at the subspecific level.

.1 = Species documented from a single location.

Note: To express uncertainty, the most likely rank is assigned and a question mark added (e.g., G2?). A range is indicated by combining two ranks (e.g., G1G2, S1S3).

## **STATE LEGAL STATUS: ANIMALS**

Two animal lists provide state status codes after the Endangered and Nongame Species Conservation Act of 1973 (NSSA 23:2A-13 et. seq.): the list of endangered species (N.J.A.C. 7:25-4.13) and the list defining status of indigenous, nongame wildlife species of New Jersey (N.J.A.C. 7:25-4.17(a)). The status of animal species is determined by the Endangered and Nongame Species Program (ENSP), with the review and approval of the Endangered and Nongame Species Advisory Committee. The state status codes and definitions provided reflect the most recent lists that were revised in the New Jersey Register, Monday, June 3, 1991.

EX = Extirpated species: a species that formerly occurred in New Jersey, but is not now known to exist within the state.

E = Endangered species: an endangered species is one whose prospects for survival within the state are in immediate danger due to one or many factors - a loss of habitat, over exploitation, predation, competition, disease. An endangered species requires immediate assistance or extinction will probably follow.

T = Threatened species: a species that may become endangered if conditions surrounding the species begin to or continue to deteriorate.

D = Declining species: a species which has exhibited a continued decline in population numbers over the years.

S = Stable species: a species whose population is not undergoing any long-term increase/decrease within its natural cycle.

INC = Increasing species: a species whose population has exhibited a significant increase, beyond the normal range of its life cycle, over a long term period.

P = Peripheral species: a species whose occurrence in New Jersey is at the extreme edge of its present natural range.

U = Undetermined species: a species about which there is not enough information available to determine the status.

I = Introduced species: species not native to New Jersey that could not have established itself here without the assistance of man.

Status for animals separated by a slash(/) indicate a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population.

#### **STATE LEGAL STATUS: PLANTS**

E = Indicates taxa listed as endangered on New Jersey's official Endangered Plant Species List (N.J.A.C. 7:5C-1.1).

#### ***OTHER STATUS CODES FOR PLANTS***

*LP = Indicates taxa listed by the Pinelands Commission as endangered or threatened within their legal jurisdiction. Not all species currently listed by the Pinelands Commission are tracked by the Natural Heritage Database. A complete list of endangered and threatened Pineland species is included in the New Jersey Pinelands Comprehensive Management Plan.*



## Explanation of New York State Rank and Status Codes

### **STATE ELEMENT RANKS: ANIMALS**

S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.

S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.

S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historically known from New York State, but not seen in the past 15 to 20 years.

SX = Apparently extirpated from New York State.

SE = Exotic, not native to New York State.

SR = State report only, no verified specimens known from New York State.

SU = Status unknown.

### *TAXON (T) RANK*

The T-ranks (T1 - T5) are defined the same way the Global ranks (G1 - G5) are, but the T-rank only refers to the rarity of the subspecific taxon.

T1 through T5 = see Global Rank definitions above.

Q = Indicates a question exists whether or not the taxon is a good taxonomic entity.

? = Indicates a question exists about the rank.

### **STATE ELEMENT RANKS: PLANTS**

S1 = Critically imperiled throughout its range due to extreme rarity (5 or fewer sites or very few remaining individuals) or extremely vulnerable to extirpation from New York State due to biological factors.

S2 = Imperiled in New York State because of rarity (6 – 20 sites or few remaining individuals) or highly vulnerable to extirpation from New York State due to biological factors.

S3 = Rare in New York State (usually 21-35 extant sites).

S4 = Apparently secure in New York State.

S5 = Demonstrably secure in New York State.

SH = Historical. No existing sites known in New York State in the last 20 years but it may be rediscovered.

SX = Apparently extirpated from New York State; very low probability of rediscovery.

SR = Reported from the state, but existence has not been documented.

SU = Status uncertain because of the cryptic nature of this plant.

### ***TAXON RANK***

The T-ranks are defined in the same way as the Global ranks, but the T-rank only refers to the rarity of the subspecific taxon, not the rarity of the species as a whole. *If a species has a subspecific name that is the same as the species name it means there is also another subspecies of that species which we do not consider rare in New York or it does not occur in New York.*

### ***DOUBLE RANKS*** (i.e. S1S2, S2S3, S1S3)

The first rank indicates rarity based upon current documentation. The second rank indicates the probable rarity after all historical records and likely habitat have been checked. DOUBLE RANKS DENOTE SPECIES THAT NEED ADDITIONAL FIELD SURVEYS.

## **STATE LEGAL STATUS: ANIMALS**

E = Endangered Species: any species which meet one of the following criteria:

- 1) Any native species in imminent danger of extirpation
- 2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T = Threatened Species: any species which meet one of the following criteria:

- 1) Any native species likely to become an endangered species within the foreseeable future in New York.
- 2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

## **STATE LEGAL STATUS: PLANTS**

E = Endangered: listed species are those with

- 1) 5 or fewer extant sites, or
- 2) fewer than 1,000 individuals, or
- 3) restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
- 4) species listed as endangered by the U.S. Department of Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T = Threatened: listed species are those with

- 1) 6 to fewer than 20 extant sites, or
- 2) 1,000 to fewer than 3,000 individuals, or
- 3) restricted to not less than 4 or more than 7 U.S.G.S. 7 ½ minute topographical maps, or
- 4) listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

R = Rare: listed species have

- 1) 20 to 35 extant sites, or
- 2) 3,000 to 5,000 individuals statewide.

V = Exploitably vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

U = Unprotected

## Explanation of Pennsylvania Rank and Status Codes

### STATE ELEMENT RANKS: PLANTS AND ANIMALS

SX = Extirpated: Element is believed to be extirpated from the "state" (or province or other subnational unit).

SH = Historical: Element occurred historically in the state (with expectation that it may be rediscovered), perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an Element would become SH without such a 20-year delay if the only known occurrences in a state were destroyed or if it had been extensively and unsuccessfully looked for. Upon verification of an extant occurrence, SH-ranked Elements would typically receive an S1 rank. The SH rank should be reserved for Elements for which some effort has been made to relocate occurrences, rather than simply ranking all Elements not known from verified extant occurrences with this rank.

S1 = Critically Imperiled: Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically 5 or fewer occurrences or very few remaining individuals or acres.

S2 = Imperiled: Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 occurrences or few remaining individuals or acres.

S3 = Vulnerable: Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences.

S4 = Apparently Secure: Uncommon but not rare, and usually widespread in the state. Usually more than 100 occurrences.

S5 = Secure: Demonstrably widespread, abundant, and secure in the state, and essentially ineradicable under present conditions.

S? = Unranked: State rank is not yet assessed.

SU = Unrankable: Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible, the most likely rank is assigned and a question mark added (e.g., S2?) to express uncertainty, or a range rank (e.g., S2S3) is used to delineate the limits (range) of uncertainty.

S#S# = Range Rank: A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the Element. Ranges cannot skip more than one rank (e.g., SU should be used rather than S1S4).

HYB = Hybrid: Element represents an interspecific hybrid.

SE = Exotic: An exotic established in the state; may be native in nearby regions (e.g., house finch or catalpa in eastern U.S.).

SE# = Exotic Numeric: An exotic established in the state that has been assigned a numeric rank to indicate its status, as with S1 through S5.

SA = Accidental: Accidental or casual in the state (i.e., infrequent and outside usual range). Includes species (usually birds or butterflies) recorded once or only a few times. A few of these species may have bred on the one or two occasions they were recorded. Examples include European strays or western birds on the East Coast and vice-versa.

SZ = Zero Occurrences: Not of practical conservation concern in the state because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations have little or no conservation value for the migrant as they are typically too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped, and protected. In other words, the migrant regularly passes through the subnation, but enduring, mappable Element Occurrences cannot be defined. Typically, the SZ rank applies to a non-breeding population in the subnation -- for example, birds on migration. An SZ rank may in a few instances also apply to a breeding population, for example certain Lepidoptera which regularly die out every year with no significant return migration. Although the SZ rank typically applies to migrants, it should not be used indiscriminately. Just because a species is on migration does not mean it receives an SZ rank. SZ only applies when the migrants occur in an irregular, transitory, and dispersed manner.

SP = Potential: Potential that Element occurs in the state but no extant or historic occurrences reported.

SR = Reported: Element reported in the state but without a basis for either accepting or rejecting the report. Some of these are very recent discoveries for which the program hasn't yet received first-hand information; others are old, obscure reports.

SRF = Reported Falsely: Element erroneously reported in the state (e.g., misidentified specimen) and the error has persisted in the literature.

SSYN = Synonym: Element reported as occurring in the state, but state does not recognize the taxon; therefore the Element is not ranked by the state.

\* = S rank has been assigned and is under review. Contact the individual state Natural Heritage program for assigned rank.

Not Provided = Species is known to occur in this state. Contact the individual state Natural Heritage program for assigned rank.

#### *BREEDING STATUS QUALIFIERS*

B = Breeding: Basic rank refers to the breeding population of the Element in the state.

N = Non-breeding: Basic rank refers to the non-breeding population of the Element in the state.

Note: A breeding status subrank is only used for species that have distinct breeding and/or non-breeding populations in the state. A breeding-status SRANK can be coupled with its complementary non-breeding-status SRANK. The two are separated by a comma, with the higher-priority rank listed first in their pair (e.g., AS2B,S3N@ or ASHN,S4S5B@).

#### OTHER QUALIFIERS

? = Inexact or Uncertain: Denotes inexact or uncertain numeric rank. For SE denotes uncertainty of exotic status. (The ? qualifies the character immediately preceding it in the SRANK.)

C = Captive or Cultivated: Element is presently extant in the state only in captivity or cultivation, or as a reintroduced population not yet established.

#### **STATE LEGAL STATUS: NATIVE PLANTS**

**Native Plant Species Legislative Authority:** Title 17 Chapter 45, Conservation of Native Wild Plants, January 1, 1988; Pennsylvania Department of Conservation and Natural Resources.

PE = Pennsylvania Endangered: Plant species which are in danger of extinction throughout most of their natural range within this Commonwealth, if critical habitat is not maintained or if the species is greatly exploited by man. This classification shall also include any populations of plant species that have been classified as Pennsylvania Extirpated, but which subsequently are found to exist in this Commonwealth.

PT = Pennsylvania Threatened: Plant species which may become endangered throughout most or all of their natural range within this Commonwealth, if critical habitat is not maintained to prevent their future decline, or if the species is greatly exploited by man.

PR = Pennsylvania Rare: Plant species which are uncommon within this Commonwealth. All species of the native wild plants classified as Disjunct, Endemic, Limit of Range and Restricted are included within the Pennsylvania Rare classification.

Disjunct = Significantly separated from their main area of distribution

Endemic = Confined to a specialized habitat.

Limit of Range = At or near the periphery of their natural distribution

Restricted = Found in specialized habitats or habitats infrequent in Pennsylvania.

PX = Pennsylvania Extirpated: Plant species believed by the Department to be extinct within this Commonwealth. These plants may or may not be in existence outside the Commonwealth.

PV = Pennsylvania Vulnerable: Plant species which are in danger of population decline within Commonwealth because of their beauty, economic value, use as a cultivar, or other factors which indicate that persons may seek to remove these species from their native habitats.

TU = Tentatively Undetermined: A classification of plant species which are believed to be in danger of population decline, but which cannot presently be included within another classification due to taxonomic uncertainties, limited evidence within historical records, or insufficient data.

N = No current legal status exists, but is under review for future listing.

### **STATE LEGAL STATUS: BIRDS AND MAMMALS**

**Wild Birds and Mammals Legislative Authority:** Title 34 Chapter 133, Game and Wildlife Code, revised Dec. 1, 1990, Pennsylvania Game Commission.

PE = Pennsylvania Endangered: Species in imminent danger of extinction or extirpation throughout their range in Pennsylvania if the deleterious factors affecting them continue to operate. These are: 1) species whose numbers have already been reduced to a critically low level or whose habitat has been so drastically reduced or degraded that immediate action is required to prevent their extirpation from the Commonwealth; or 2) species whose extreme rarity or peripherality places them in potential danger of precipitous declines or sudden extirpation throughout their range in Pennsylvania; or 3) species that have been classified as "Pennsylvania Extirpated", but which are subsequently found to exist in Pennsylvania as long as the above conditions 1 or 2 are met; or 4) species determined to be "Endangered" pursuant to the Endangered Species Act of 1973, Public Law 93 205 (87 Stat. 884), as amended.

PT = Pennsylvania Threatened: Species that may become endangered within the foreseeable future throughout their range in Pennsylvania unless the casual factors affecting the organism are abated. These are: 1) species whose populations within the Commonwealth are decreasing or have been heavily depleted by adverse factors and while not actually endangered, are still in critical condition; 2) species whose populations may be relatively abundant in the Commonwealth but are under severe threat from serious adverse factors that have been identified and documented; or 3) species whose populations are rare or peripheral and in possible danger of severe decline throughout their range in Pennsylvania; or 4) species determined to be "Threatened" pursuant to the Endangered Species Act of 1973, Public Law 93205 (87 Stat. 884), as amended, that are not listed as "Pennsylvania Endangered".

N = No current legal status but is under review for future listing.

### **STATE LEGAL STATUS: FISH, AMPHIBIANS, REPTILES, AND AQUATIC ORGANISMS**

**Fish, Amphibians, Reptiles, and Aquatic Organisms Legislative Authority:** Title 30, Chapter 75, Fish and Boat Code, revised February 9, 1991; Pennsylvania Fish Commission.

PE = Pennsylvania Endangered: All species declared by: 1) the Secretary of the United States Department of the Interior to be threatened with extinction and appear on the Endangered Species List or the Native Endangered Species List published in the Federal Register; or 2) have been declared by the Pennsylvania Fish Commission, Executive Director to be threatened with extinction and appear on the Pennsylvania Endangered Species List published by the Pennsylvania Bulletin.



PT = Pennsylvania Threatened: All species declared by: 1) the Secretary of the United States Department of the Interior to be in such small numbers throughout their range that they may become endangered if their environment worsens, and appear on a Threatened Species List published in the Federal Register; or 2) have been declared by the Pennsylvania Fish Commission Executive Director to be in such small numbers throughout their range that they may become endangered if their environment worsens and appear on the Pennsylvania Threatened Species List published in the Pennsylvania Bulletin.

PC = Animals that could become endangered or threatened in the future. All of these are uncommon, have restricted distribution or are at risk because of certain aspects of their biology.

N = No current legal status, but is under review for future listing.

#### **STATE LEGAL STATUS: INVERTEBRATES**

**Invertebrates Legislative Authority:** No state agency has been assigned to develop regulations to protect terrestrial invertebrates although a federal status may exist for some species. Aquatic invertebrates are regulated by the Pennsylvania Fish Commission but have not been listed to date.

N = No current legal status but is under review for future listing.

#### **PENNSYLVANIA BIOLOGICAL SURVEY (PBS) SUGGESTED (PROPOSED) STATUS CODES: PLANTS AND ANIMALS**

PE = Pennsylvania Endangered: Species in imminent danger of extinction or extirpation throughout their range in Pennsylvania if the deleterious factors affecting them continue to operate. These are: 1) species whose numbers have already been reduced to a critically low level or whose habitat has been so drastically reduced or degraded that immediate action is required to prevent their extirpation from the Commonwealth; or 2) species whose extreme rarity or peripherality places them in potential danger of precipitous declines or sudden extirpation throughout their range in Pennsylvania; or 3) species that have been classified as "Pennsylvania Extirpated", but which are subsequently found to exist in Pennsylvania as long as the above conditions 1 or 2 are met; or 4) species determined to be "Endangered" pursuant to the Endangered Species Act of 1973, Public Law 93 205 (87 Stat. 884), as amended.

PT = Pennsylvania Threatened: Species that may become endangered within the foreseeable future throughout their range in Pennsylvania unless the casual factors affecting the organism are abated. These are: 1) species whose populations within the Commonwealth are decreasing or have been heavily depleted by adverse factors and while not actually endangered, are still in critical condition; 2) species whose populations may be relatively abundant in the Commonwealth but are under severe threat from serious adverse factors that have been identified and documented; or 3) species whose populations are rare or peripheral and in possible danger of severe decline throughout their range in Pennsylvania; or 4) species determined to be "Threatened" pursuant to the Endangered Species Act of 1973, Public Law 93205 (87 Stat. 884), as amended, that are not listed as "Pennsylvania Endangered."

PR = Pennsylvania Rare: Plant species which are uncommon within this Commonwealth. All species of the native wild plants classified as Disjunct, Endemic, Limit of Range and Restricted are included within the Pennsylvania Rare classification.

Disjunct = Significantly separated from their main area of distribution

Endemic = Confined to a specialized habitat.

Limit of Range = At or near the periphery of their natural distribution

Restricted = Found in specialized habitats or habitats infrequent in Pennsylvania.

CP = Candidate Proposed: Species comprising taxa for which the Pennsylvania Biological Survey (PBS) currently has substantial information on hand to support the biological appropriateness of proposing to list as Endangered or Threatened.

CA = Candidate at Risk: Species that although relatively abundant now are particularly vulnerable to certain types of exploitation or environmental modification.

CR = Candidate Rare: Species which exist only in one of a few restricted geographic areas or habitats within Pennsylvania, or they occur in low numbers over a relatively broad area of the Commonwealth.

CU = Condition Undetermined: Species for which there is insufficient data available to provide an adequate basis for their assignment to other classes or categories.

PX = Pennsylvania Extirpated: Species that have disappeared from Pennsylvania since 1600 but still exist elsewhere.

DL = Delisted: Species which were once listed but are now cited for delisting.

N = No current legal status, but is under study for future listing.

## Explanation of West Virginia State Rank Codes

### **STATE ELEMENT RANK: ANIMALS AND PLANTS**

S1 = Five or fewer documented occurrences, or very few remaining individuals within the state. Extremely rare and critically imperiled; or because of some factor(s) making it especially vulnerable to extirpation.

S2 = Six to 20 documented occurrences, or few remaining individuals within the state. Very rare and imperiled; or because of some factor(s) making it vulnerable to extirpation.

S3 = Twenty-one to 100 documented occurrences. May be somewhat vulnerable to extirpation.

S4 = Common and apparently secure with more than 100 occurrences.

S5 = Very common and demonstrably secure.

SH = Historical. Species which have not been relocated within the last 20 years. May be rediscovered.

SR = Reported from state, but not yet verified.

SX = Believed extirpated. Little likelihood of rediscovery.

SU = Possibly rare, but status uncertain until more data are gathered.

S? = Unranked, or, if following a number, rank uncertain (ex. S2?).

### *QUALIFIERS*

B = Breeding populations

N = Non-breeding populations

A = Accidental or adventive

## Rank and Status Resources

### New Jersey: Natural Heritage Program/New Jersey Department of Environmental Protection (NJDEP)

Note: All State Element Ranks were taken from the New Jersey Natural Heritage Program. Vertebrate and Invertebrate State Legal Status' and Species of Special Concern were taken from the New Jersey Department of Environmental Protection, Division of Fish & Wildlife.

Plants: State Element Rank, State Legal Status, Global Element Rank, and code explanations:

<http://www.state.nj.us/dep/parksandforests/natural/heritage/spplant.html>

Invertebrates and Vertebrates: State Element Rank, State Legal Status, Global Element Rank, and code explanations:

<http://www.state.nj.us/dep/parksandforests/natural/heritage/spanimal.html>

Invertebrates and Vertebrates Species of Special Concern (also includes status definitions):

<http://www.state.nj.us/dep/fgw/ensp/pdf/spclspp.pdf>

Invertebrates and Vertebrates State Legal Status:

<http://www.state.nj.us/dep/fgw/tandespp.htm>

### New York: Natural Heritage Program/New York State Department of Environmental Conservation (NYSDEC)

Animals State Element Rank, State Legal Status, Global Element Rank, and code explanations:

<http://www.dec.state.ny.us/website/dfwmr/heritage/animals.htm>

Plants State Element Rank, State Legal Status, Global Element Rank, and code explanations:

<http://www.dec.state.ny.us/website/dfwmr/heritage/rpsl.pdf>

**Pennsylvania: Natural Heritage Program/Pennsylvania Department of Conservation and Natural Resources (DCNR)**

Plants            State Element Rank, Legal Status, Proposed Legal Status, and Global Element Rank:

<http://www.dcnr.state.pa.us/forestry/pndi/plants.asp>

Vertebrates     State Element Rank, Legal Status, Proposed Legal Status, and Global Element Rank:

<http://www.dcnr.state.pa.us/forestry/pndi/vertebrates.asp>

Invertebrates   State Element Rank, Legal Status, Proposed Legal Status, and Global Element Rank:

<http://www.dcnr.state.pa.us/forestry/pndi/invertebrates.asp>

Animal, Invertebrate, and Plant    State Element Rank and Legal Status definitions:

<http://www.dcnr.state.pa.us/forestry/pndi/rank.htm>

**West Virginia: Natural Heritage Program/West Virginia Division of Natural Resources (WVDNR)**

Animals and Plants            State Element Rank, Global Element Rank, and code explanations:

<http://www.wvdnr.gov/Wildlife/RareSpecList.shtm>